

DEMERSAL FISH (NORTHERN) COMMITTEE

by A. Hysten

1972

Belgium

(R. De Clerck)

Work at sea

The RV "Hinders" continued the monthly cruises off the Belgian coast on 10 stations to determine the density and the composition of juvenile soles, plaice, dabs, flounders, gadoids, shrimps and other organisms.

The joint programme with Holland and Germany on the nurseries was continued by two cruises.

1 500 plaice were tagged off the Belgian coast. 2 500 plaice were tagged on board the RV "Tridens" in the Morecambe Bay.

Work on fish

The stock analysis by means of market sampling was continued. Age, length, weight, sex and stage of maturity of cod, whiting, plaice and sole were determined. The areas studied are as follows :
Cod : North Sea; whiting : North Sea; plaice : North Sea, English Channel, Bristol Channel and Irish Sea; sole : North Sea, English Channel, Bristol Channel and Irish Sea.

Area	Season	No. of Samples		No. of Fish	
		Research Vessels	Market Samples	Measured	Aged
Sole: North Sea	1 trim	-	21	3 453	210
	2	-	15	1 931	210
	3	8	8	1 157	325
	4	-	10	1 180	130
Irish Sea	1 trim	-	6	775	200
	2	-	13	1 960	210
	3	-	4	602	280
	4	-	3	406	140
Bristol Channel	1 trim	-	13	1 763	210
	2	-	4	546	210
	3	-	6	841	140
	4	-	4	564	210
English Channel	1 trim	-	3	295	70

Area	Season	No. of Samples		No. of Fish	
		Research Vessels	Market Samples	Measured	Aged
<u>Plaice:</u> North Sea	1 trim	6	24	2 035	275
	2	8	13	1 304	441
	3	8	8	878	441
	4	6	8	744	203
Irish Sea	1 trim	-	6	595	150
	2	-	8	620	140
	3	1	5	645	395
	4	-	3	254	100
Bristol Channel	1 trim	-	7	524	130
	2	-	2	273	150
	3	-	7	523	90
	4	-	4	369	150
English Channel	1 trim	-	3	244	100
<u>Cod:</u> North Sea	1 trim	6	13	1 162	409
	2	8	6	502	167
	3	8	11	808	268
	4	6	5	280	107
<u>Whiting:</u> North Sea	1 trim	6	7	296	129
	2	8	4	274	158
	3	8	6	299	154
	4	6	4	311	151

Canada

(A.M. Fleming)

A fuller report on research by Canada in 1973 on demersal fish species is contained in the Canadian research report to the Annual Meeting of ICNAF, May-June 1973.

Landings of the principal demersal species from the SW Atlantic area by Canada in 1972 totalled about 470 000 metric tons, about 10% below the 1971 total. The decline in landings resulted from a general increase in landings of most of the major species. Although some of the decrease can be attributed to adverse weather the catch per unit of effort is lower in many fisheries because of the increased effort of the large international fleets.

In 1972 intensive studies were conducted related to international management of fisheries in the ICNAF Convention Area adjacent to Canada. Comprehensive assessments were provided for the major stocks of cod in areas from southern Labrador to the Scotian Shelf (ICNAF Subareas 2,3 and 4); for stocks of American plaice and yellowtail flounders from the Grand Bank (ICNAF Subarea 3), and for stocks of haddock on the Scotian Shelf (Subarea 4).

From the data obtained by these assessments international catch quotas for 1973 were recommended by ICNAF for most of the major demersal stocks of cod, haddock and flounders in Subareas 2,3 and 4 of ICNAF.

To provide data for continued assessments an intensive programme of research vessel surveys and sampling of commercial catches was carried out (see following tables).

Associated biological studies were continued on various species. Tagging of yellowtail flounder on the Grand Bank (Subarea 3) was carried out in October to study stock relationships and migratory patterns.

Intestinal helminth parasites of various species of flounders are being assessed as an indicator for flatfish populations from the Gulf of St Lawrence to the Bay of Fundy (ICNAF Subarea 4).

Research vessel studies of fish egg and larvae distribution and abundances related to adult demersal stocks were continued in the Gulf of St Lawrence. From a study of species associations on the Scotian Shelf different basic demersal assemblages were identified in different environmental habitats in the area.

An investigation of northern sand lance (Ammodytes dubius) in the northwest Atlantic indicated the stock consisted of local concentrations in sandy areas on tops of offshore banks. Larval abundance and occasional very large catches on the Scotian Shelf support estimates of biomass as high as for some commercially important fish.

ICNAF Division	Species	Gear	Quarter	Lengths	Age	Type
2J	Cod	-	July-Sept.	2668	645	Commercial
3K	Plaice	Gillnet	July-Sept.	1767	252	"
	Witch	"	" "	1968	205	"
	G. halibut	"	" "	1761	187	"
	Cod	-	" "	2460	254	"
3L	Cod	Trap	Apr.-June	2393	110	Commercial
	"	Gillnet	" "	1621	216	"
	"	O/T	" "	1241	279	Research
	"	"	" "	1890	254	Commercial
	"	-	July-Sept.	10432	988	"
	"	O/T	" "	493	100	"
	"	"	Oct.-Dec.	1121	59	"
	"	"	" "	272	160	Research
	Haddock	Trap	Apr.-June	319	200	Commercial
	Plaice	O/T	" "	7858	1070	Research
	"	"	" "	1393	248	Commercial
	"	"	July-Sept.	2221	300	"
	"	"	Oct.-Dec.	240	11	Research
	"	"	" "	1991	203	Commercial
	Yellowtail	"	Apr.-June	321	83	Research
	"	"	" "	2893	418	Commercial
	"	"	Oct.-Dec.	519	97	Research
	Witch	-	Apr.-June	136	30	Commercial
	"	O/T	July-Sept.	520	101	"
3N	Plaice	O/T	Apr.-June	2253	896	Research
	"	-	" "	354	80	Commercial
	"	O/T	Oct.-Dec.	701	174	Research
	Yellowtail	"	Apr.-June	5057	460	"
	"	"	" "	1557	299	Commercial
	"	"	July-Sept.	1075	76	"
	"	"	Oct.-Dec.	4052	509	Research
	"	"	" "	1672	148	Commercial
	Witch	"	Apr.-June	58	43	Research
	G. halibut	"	" "	2	2	"
3O	Plaice	-	July-Sept.	796	170	Commercial
	"	O/T	Oct.-Dec.	671	61	Research
	Yellowtail	"	" "	232	37	"
	"	-	" "	200	40	Commercial
	Witch	O/T	Jan.-Mar.	515	96	"
	White hake	-	July-Sept.	414	94	"

ICNAF Division	Species	Gear	Quarter	Lengths	Age	Type
3Pn	Cod	Gillnet	Jan.-Mar.	5522	332	Commercial
3Ps	Cod	O/T	Jan.-Mar.	1017	427	Research
	"	"	Apr.-June	2706	499	"
	"	-	" "	7633	781	Commercial
	"	Longline	July-Sept.	3043	459	"
	"	O/T	Oct.-Dec.	486	273	Research
	"	"	" "	370	101	Commercial
	Haddock	{ "	{ Jan.-Mar.	{ 370	{ 370	{ Research
	"	"	" "	39	39	"
	"	Trap	" "	437	279	Commercial
	"	O/T	Oct.-Dec.	3	3	Research
	Witch	"	Jan.-Mar.	84	65	"
	"	-	Oct.-Dec.	773	90	Commercial
	Plaice	O/T	Jan.-Mar.	277	44	Research
	"	-	Oct.-Dec.	406	91	Commercial
	Redfish	O/T	" "	593	58	Research
	"	-	" "	212	-	Commercial
	White hake	-	July-Sept.	214	-	"
4R	Cod	-	Apr.-June	3649	351	Commercial
	"	-	July-Sept.	1853	-	"
	Redfish	-	" "	229	-	"
	"	-	Oct.-Dec.	2489	183	"
	"	O/T	" "	6921	253	Research
4S	Redfish	-	July-Sept.	1540	-	Commercial
	"	-	Oct.-Dec.	1339	55	"
	Cod	-	July-Sept.	200	57	"
	"	-	Oct.-Dec.	200	35	"
	"	O/T	" "	290	238	Research
	Cod	-	Jan.-Mar.	962	137	Commercial
	"	-	Apr.-June	2138	338	"
	"	-	July-Sept.	2316	357	"
	"	O/T	" "	3345	1367	Research
	"	"	Oct.-Dec.	66	66	"
	"	-	" "	655	115	Commercial
	Redfish	O/T	July-Sept.	1833	80	Research
	"	-	" "	1010	-	Commercial
	"	O/T	Oct.-Dec.	1706	230	Research
	White hake	"	July-Sept.	168	80	"
	Plaice	"	" "	4797	1409	"
	"	-	" "	214	71	Commercial
	"	-	Oct.-Dec.	206	35	"
	Witch	O/T	July-Sept.	66	66	Research
	Yellowtail	"	" "	324	186	"
	Winter flounder	"	" "	888	145	"

ICNAF Division	Species	Gear	Quarter	Lengths	Age	Type
4Vn	Cod	-	Jan.-Mar.	598	106	Commercial
	"	-	July-Sept.	701	103	"
	"	O/T	" "	107	107	Research
	Haddock	"	" "	34	33	"
	White hake	"	" "	86	-	"
	Redfish	-	Jan.-Mar.	685	-	Commercial
	"	-	Apr.-June	257	-	"
	"	O/T	July-Sept.	1534	-	Research
4Vs	Plaice	"	" "	526	198	"
	Cod	-	Jan.-Mar.	986	162	Commercial
	"	-	Apr.-June	222	48	"
	"	O/T	July-Sept.	604	348	Research
	Haddock	"	" "	137	136	"
	Redfish	-	Jan.-Mar.	224	-	Commercial
	"	-	Apr.-June	881	-	"
	"	O/T	July-Sept.	1997	-	Research
	Plaice	-	Jan.-Mar.	400	80	Commercial
	"	O/T	" "	142	142	Research
	"	-	Apr.-June	300	74	Commercial
	"	O/T	July-Sept.	1447	710	Research
	Witch	-	Jan.-Mar.	317	71	Commercial
	"	O/T	" "	59	59	Research
	"	"	July-Sept.	189	189	"
	Yellowtail	"	Jan.-Mar.	59	59	"
	"	-	Apr.-June	100	32	Commercial
	"	O/T	July-Sept.	1567	451	Research
4Vn+S	Cod	-	Jan.-Mar.	207	46	Commercial
4W	Cod	-	Jan.-Mar.	682	103	Commercial
	"	O/T	" "	270	103	Research
	"	"	Apr.-June	44	42	"
	"	"	July-Sept.	679	439	"
	"	-	Oct.-Dec.	1270	199	Commercial
	Haddock	O/T	Jan.-Mar.	801	642	Research
	"	-	" "	1170	190	Commercial
	"	O/T	Apr.-June	186	186	Research
	"	-	" "	338	30	Commercial
	"	O/T	July-Sept.	115	109	Research
	"	-	Oct.-Dec.	440	65	Commercial
	White hake	O/T	Jan.-Mar.	39	-	Research
	"	"	July-Sept.	51	-	"
	Redfish	O/T	Apr.-June	116	-	"
	"	-	" "	441	-	Commercial
	"	-	July-Sept.	1160	-	"
	"	O/T	" "	1141	-	Research

ICNAF Division	Species	Gear	Quarter	Lengths	Age	Type
4W (cont.)	Plaice	O/T	Jan.-Mar.	412	412	Research
	"	"	Apr.-June	73	73	"
	"	"	July-Sept.	734	499	"
	Witch	"	Jan.-Mar.	174	174	"
	"	-	Apr.-June	100	30	Commercial
	"	O/T	July-Sept.	78	78	Research
	"	-	Oct.-Dec.	200	33	Commercial
	Yellowtail	O/T	Jan.-Mar.	280	142	Research
	"	"	Apr.-June	149	98	"
	"	"	July-Sept.	1368	607	"
4X	Winter flounder	"	" "	95	27	"
	Cod	-	Jan.-Mar.	1202	197	Commercial
	"	O/T	" "	83	80	Research
	"	-	Apr.-June	331	57	Commercial
	"	O/T	" "	360	358	Research
	"	-	July-Sept.	1313	318	Commercial
	"	-	Oct.-Dec.	965	240	"
	Haddock	-	Jan.-Mar.	4230	518	"
	"	O/T	" "	727	349	Research
	"	-	Apr.-June	1500	177	Commercial
	"	O/T	" "	1008	1005	Research
	"	-	July-Sept.	2229	399	Commercial
	"	-	Oct.-Dec.	764	131	"
	White hake	O/T	Apr.-June	112	-	Research
	"	-	July-Sept.	166	41	Commercial
	Cusk	O/T	Apr.-June	56	-	Research
	"	-	July-Sept.	100	32	Commercial
	Redfish	-	Apr.-June	442	-	"
	"	O/T	" "	1233	-	Research
	Pollock	"	" "	254	163	"
	"	-	" "	470	105	Commercial
	"	-	Oct.-Dec.	794	135	"
	Plaice	O/T	Apr.-June	222	222	Research
	Witch	"	" "	94	93	"
	Yellowtail	"	" "	96	95	"
4X-5Z	Cod	-	Oct.-Dec.	401	63	Commercial
5Z	Cod	-	Jan.-Mar.	279	64	Commercial
	"	-	July-Sept.	400	133	"
	Haddock	-	" "	126	30	"
	White hake	O/T	Apr.-June	97	-	Research
	Redfish	"	" "	124	-	"
	Plaice	"	" "	43	43	"
	Witch	"	" "	96	96	"
	Silver hake	"	" "	61	2	"

Denmark
(O. Bagge)

Plaice

In July and August quantitative fishery for 0-group plaice was carried out in inshore waters.

In the northern Kattegat and the western Baltic the catches were of average size. In the southern Kattegat they were above average and in the Belt Sea below average size.

Haddock, whiting and cod

On the "Dana" cruise in February and March length measurements and otoliths were collected.

Sole

The sampling in May continued and an age-length key was worked out. It was found that for otter-trawl the year class 1968 was dominating and constituted 30.5% of the total landings. For gill-nets it was found that the year class 1968 was dominating and constituted 46.5% of the total landings.

Turbot and brill

Thirty brill and 14 turbot have been tagged in the central Kattegat.

Cod

Tagging of cod has been carried out in the Jutland Bank area in April, 1 021 individuals were tagged. 175 cod caught on the Jutland Bank were transplanted to the Kattegat, tagged and released NW of Anholt.

Federal Republic of Germany
(A. Meyer)

Continuation of the biological studies at sea on research ships and factory trawlers and at the markets with length measurements, collection of otoliths, maturity, food and taggings.

Research trips :

January : North Sea	May : North Sea
March : North Sea	July : North Sea
March : Norwegian Coast	October : North Sea
April : Baltic Sea	November : North Sea

Factory trawler

February : Norwegian Coast.

Sampling Data

Area	Season	No. of Samples		No. of Fish		Racial Investigation
		Research Vessels	Market Samples	Measured	Aged	
<u>COD</u>						
IIa	1	4	8	2 928	1 517	-
IIIb	2	43	-	11 663	3 281	-
IIIc	1	4	3	21 513	3 331	-
	2	2	3	17 190	147	-
	3	-	3	17 139	35	-
	4	3	3	18 200	2 455	-
IVb	1	110	-	9 454	2 513	-
	4	48	-	1 191	665	-
IVc	1	20	-	2 398	873	-
Va	1	-	3	1 125	574	-
	2	-	6	2 278	1 079	-
	3	-	5	1 945	840	-
	4	-	2	663	340	-
<u>HADDOCK</u>						
IIa	1	-	7	2 466	646	-
IVb	1	19	-	2 635	454	-
Va	1	-	2	551	137	-
	2	-	2	789	198	-
	3	-	1	313	149	-
<u>SAITHE</u>						
IIa	1	24	11	4 514	3 983	-
	2	-	1	510	510	-
IVa	1	-	2	589	211	-
	3	-	3	1 178	386	-
Va	1	-	4	1 577	1 159	-
	2	34	20	9 641	2 588	-
	3	-	16	6 553	2 362	-
	4	-	16	5 917	2 156	-
Vb	1	-	1	216	216	-
	3	-	2	434	434	-
	4	-	3	1 054	711	-
VIIa	1	-	1	432	432	-
<u>REDFISH</u>						
IIa	1	17	-	725	160	<u>S. marinus</u>
	1-4	-	7	1 545	-	"
IVa	1	3	-	487	-	"
Va	2	32	-	2 727	-	"
	1-4	-	11	2 250	-	"
	1-4	-	51	11 621	250	<u>S. mentella</u>
XIV	1-4	-	10	2 040	-	<u>S. marinus</u>

Sampling Data

Area	Season	No. of Samples		No. of Fish		Racial Investigation
		Research Vessels	Market Samples	Measured	Aged	
<u>WHITING</u>						
IVb	1	11	-	1 944	-	-
<u>PLAICE</u>						
IIIc	1	9	-	1 245	1 200	-
	2	5	-	282	282	-
	4	4	-	229	229	-
IVb	1	59	2	8 174	905	-
	2	-	6	2 967	958	-
	3	-	5	2 646	806	-
	4	35	2	4 126	66	-
<u>FLOUNDER</u>						
IIIc	1	9	1	930	930	-
	2	5	2	630	630	-
	3	3	-	350	350	-
	4	4	-	30	30	-

France

(G. Lefranc)

Travail en mer

En mai et juin 1972, le N.O. "Thalassa" a réalisé une campagne de prospection et d'inventaire des ressources des côtes orientales du Groënland; de nombreuses données biologiques et biométriques concernant surtout la morue et le sébaste ont été recueillies sur le Dohrn Bank, le Gauss Bank, Angmassalik Bank, Mösting Grund et Heimland Rücken.

La "Thalassa" a, d'autre part, prospecté deux secteurs de la Mer du Nord : dans la partie est du Dogger Bank entre 54°30'N et 56°N pour la recherche des concentrations de merlan, entre 62°N et 63°N et 3°30'E sur des fonds compris entre 400 et 800 m pour apprécier la répartition et l'abondance des principales espèces démersales. Au cours de ces deux campagnes, la morue, le merlan et le lieu noir ont fait l'objet d'études toutes particulières sur la répartition des tailles, la composition en âges des divers stocks et sur les corrélations taille/poids plein et poids vide. D'autre part, 1 562 morues ont été marquées en Mer du Nord septentrionale dans la région de "Forty Miles".

En mars et novembre, deux autres campagnes de prospection et de chalutage ont été faites dans les secteurs VIa, VIIb, c et VIIg, h, i, k.

Travail au laboratoire

Morue - merlan. Les relevés statistiques concernant les apports des bateaux travaillant dans le centre et le sud de la Mer du Nord sont poursuivis; ils permettent pour ces deux espèces de connaître la composition en tailles et en âges des poissons pêchés dans les secteurs IVb et IVc.

En 1972, nous avons commencé l'étude des recaptures de morues marquées en Mer du Nord septentrionale au cours des différentes campagnes de la "Thalassa".

La biologie du merlan du sud de la Mer du Nord, son abondance relative par rapport aux autres espèces démersales pêchées dans les secteurs IVb et surtout IVc ainsi que l'influence du maillage sur la qualité commerciale de ce poisson ont fait l'objet d'une recherche qui sera continuée en 1973.

Lieu noir - églefin - sole et plie. Les tonnages débarqués mensuellement pour chacune de ces quatre espèces sont relevés en fonction des groupes de tailles définis par la C.E.E.

Echantillonnage

MORUE

Région	Saison 1972	Nb. échantillons		Nb. de poissons mesurés	Nb. otolithes prélevés	Nb. de poissons classés suivant race
		Bateau de recherche	Marché			
IVC	mars	2	-	250	-	-
IVb	mars	8	-	2 451	240	-
IVa	oct.	27	-	2 579	350	-
Ouest Irlande)	avril	-	-	98	-	-
	nov.	-	-	64	-	-
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<u>MERLAN</u>						
IVc	mars	3	-	591	-	-
IVb	mars	22	-	4 788	110	-
IVa	oct.	18	-	3 132	395	-
Ouest Irlande)	avril	-	-	116	-	-
	oct-déc.	-	1 759	-	133	-
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<u>EGLEFIN</u>						
IVb	mars	1	-	101	-	-
IVa	oct.	18	-	2 992	-	-
Ouest Irlande)	avril	-	-	1 729	-	-
	nov.	-	-	1 500	-	-
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<u>LIEU NOIR</u>						
IVa	oct.	8	-	432	-	-
Ouest Irlande)	avril	-	-	327	-	-
	nov.	-	-	226	-	-

MERLAN BLEU

Région	Saison 1972	Nb. échantillons		Nb. de poissons mesurés	Nb. otolithes prélevés	Nb. de poissons classés suivant race
		Bateau de recherche	Marché			
Ouest } Irlande }	avril nov.	- -	- -	1 751 832	- -	- -
<u>LIMANDE</u>						
IVb	mars	3	-	623	-	-
IVc	mars	1	-	215	-	-
<u>CARRLET</u>						
IVb	oct.	1	-	90	-	-

Iceland

(J. Jónsson)

The work at sea was carried out by the RV "Bjarni Sæmundsson" and "Hafthor". Both ships were in use all the year and made regular surveys of the hydrographical conditions in Iceland and East Greenland waters. Besides this, RV "Bjarni Sæmundsson" did a survey of the area between Jan Mayen and Spitzbergen in cooperation with the University of Seattle to study the hydrography of that area with a special regard to the ice conditions, currents and the formation of arctic bottom water.

These whips were also engaged in surveys of the most important stocks of demersal fish around Iceland and at East Greenland. A list of the sampling data on the most important commercial species are shown on the following page. Besides this, ichthyological data were collected on 40 other species of demersal fish in Icelandic waters.

An extensive tagging programme of cod, haddock, plaice, Greenland halibut, lump sucker and catfish was continued.

Three trips were made with RV "Bjarni Sæmundsson" to study the pelagic distribution of redfish SW of Iceland and in the Irminger Sea.

A joint O-group survey in Faroese-, Icelandic- and East Greenlandic waters was made in July-August 1972. The ships which took part were : R.V. "Cirolana" (U.K.), "Fritjof Nansen" (USSR), "Bjarni Sæmundsson" (Iceland) and Arni Fridriksson" (Iceland)

Icelandic sampling data on demersal fish in 1972 (all year)

Area	Species	Market sampling		Research vessel sampling		
		measured	aged	measured	aged	tagged
Va	Cod	24763	6305	9120	3245	3378
XIV	Cod			740	983	429
Va	Haddock	3768	2006	15992	2986	1754
-	Whiting			1219	328	
-	Coalfish			348	102	
-	Norway pout			1609	558	
-	Blue whiting			840		
-	Ling			317		
-	Blue ling			368		
-	Torsk			581		
-	Sebastes Sp.	1204		7593	1117	
XIV	-			7260	710	
Va	Plaice			2797	1706	3829
Va	Halibut			621	1170	
XIV	-			30	42	
Va	Greenl. halibut			3696	1933	5053
XIV	-			564	36	
Va	Lemon sole			470		
Va	Dab			2461		
	Long rough dab			1383		
	Lumpsucker			97	1199	3294
XIV	-				4	3
Va	Catfish				1801	2173
XIV	-			257	84	45
Va	Grenadier			892	236	
-	Angler			42		
-	Silver smelt (gr.)			532	343	
-	Starry Ray			1516		

Ireland

(A.E.J. Went)

During the year work in Ireland was restricted to examination of 13 samples of whiting comprising 2 958 specimens in all.

Sampling Data for WHITING

Area	Season	No. of Samples		Number of Fish		
		Research Vessels	Market Samples	Measured	Aged	Racial Investigation
VIIa	Q4	-	3	700	368	-
Irish Sea	1972	10	-	2 258	510	-

Netherlands

(J. F. de Veen)

Work at Sea

The RV "Tridens" made 16 cruises in the Committee's area of which 10 were mainly or partly devoted to work within the scope of the Demersal Fish (Northern) Committee. The corresponding numbers of cruises by RV "Willem Beukelsz" were 15 and 10. The RV "Vaddenzee", "Stern" and "Schollevaar" made together 19 cruises devoted to demersal topics in the Netherlands estuaries. The RV "Tridens", "Willem Beukelsz", "Stern" and "Schollevaar" made two joint cruises (in April and October) to analyse the stocks of juvenile sole, plaice, dab, flounder, gadoids, shrimps and other organisms in the nurseries of Belgium, Holland, Germany and part of Denmark in cooperation with the Belgian research cutter "Hinders" and the German RV "Neptun".

Work on Fish

Plaice. The stock analysis by means of market sampling was continued. Analysis of the catches of the young fish cruises in the Southern and Central North Sea continental coast areas revealed that the 1971 year class is good and the 1972 year class average to poor.

Sole. The stock analysis by means of market sampling of sole from different localities in the North Sea, the Irish Sea and the Bristol Channel was continued. Two cruises (in March and August) were made to the Irish Sea and the Bristol Channel for census and tagging purposes. An analysis of the catches of undersized sole in the Dutch, German and Belgian coastal area on a standard network of stations was made twice in order to be able to predict commercial catches. The year class 1971 appeared to be average to poor and the 1972 year class was poor.

The following numbers of fish per species were tagged :

Sole : Irish Sea 3 150 (adults); Dutch nurseries 1 900 (juveniles)

Plaice: North Sea 6 900 (adults); Dutch nurseries 7 500 (juveniles)

Flounder:

Dutch nurseries 1 500 (adults & Juveniles)

Cod: North Sea 2 300 (adults)

Whiting: North Sea 800 (adults)

Cod, haddock and whiting. The stock analysis by means of market sampling was continued.

Cod. In the Southern and Central North Sea the year class 1971 is poor and the year class 1972 average. Three egg and larvae surveys were made in the Central and Southern North Sea.

Whiting. The year class 1971 was poor and the 1972 year class rich in the Southern and Central North Sea.

The Netherlands 1972.

Sampling data for Sole

Area	Season	No of samples only for age- determination		Number of Fish		
		Research ship	Market	measured	aged	racial invest.
IV b	1st quarter	-	2	2125	100	100
	2nd quarter	5	20	3385	1081	1081
	3rd quarter	-	11	2375	549	549
	4th quarter	6	4	2658	365	365
IV c	1st quarter	-	4	3875	196	196
	2nd quarter	3	20	6385	1075	1075
	3rd quarter	-	12	2500	632	632
	4th quarter	3	4	2033	259	259
VII a	1st quarter	6	4	250	613	613
	2nd quarter	-	11	625	408	408
	3rd quarter	2	-		127	127
Dutch Waddensea	2nd quarter	3	-	403	32	32
	4th quarter	6	-	755	79	79
Zeeland estuary	2nd quarter	4	-	946	88	88
	4th quarter	-	-	95		
Total annually		38	92	28410	5604	5604

The Netherlands 1972.

Sampling data for Plaice

Area	Season	No of samples only for age- determination		Number of Fish		
		Research ship	Market	measured	aged	racial invest.
IV b	1st quarter	-	48	4050	3609	3609
	2nd quarter	6	3	3180	572	572
	3rd quarter	-	5	1880	354	354
	4th quarter	8	1	3600	610	610
IV c	1st quarter	-	35	5550	2521	2521
	2nd quarter	3	3	3530	434	434
	3rd quarter	-	2	1280	121	121
	4th quarter	5	6	3900	792	792
Dutch Waddensea	2nd quarter	5	-	3000	170	170
	4th quarter	9	-	3390	237	237
Zeeland estuary	2nd quarter	3	-	2460	99	99
	4th quarter	-	-	740		
Total annually		39	103	36560	9519	9519

sampling data for Cod

area	season	No. of samples for age-determination only		Number of Fish		
		research ship	market	measured	aged	racial investigations
IV a	1st quarter	2	2	530	250	-
	2nd quarter	-	3	385	175	-
	3rd quarter	-	-	275	75	-
	4th quarter	-	2	330	150	-
IV b	1st quarter	3	2	905	300	-
	2nd quarter	1	3	660	200	-
	3rd quarter	-	4	1485	285	-
	4th quarter	-	2	715	150	-
IV c	1st quarter	1	2	1620	210	-
	2nd quarter	-	1	880	75	-
	3rd quarter	-	3	440	175	-
	4th quarter	1	2	990	150	-
Total annually		8	27	9215	2195	-

The Netherlands 1972

sampling data for Whiting

area	Season	<u>No. of samples</u> only for age- determination		Number of Fish		
		research ship	market	measured	aged	racial investigations
IV a	1st quarter	2	3	594	250	-
	2nd quarter	-	3	714	150	-
	3rd quarter	-	1	210	50	-
	4th quarter	-	2	294	100	-
IV b	1st quarter	3	2	988	250	-
	2nd quarter	2	2	462	200	-
	3rd quarter	-	5	924	250	-
	4th quarter	-	2	546	100	-
IV c	1st quarter	1	1	1182	100	-
	2nd quarter	-	2	798	100	-
	3rd quarter	-	-	672	-	-
	4th quarter	2	2	1092	200	-
Total annually		10	25	8476	1750	

The Netherlands 1972

sampling data for Haddock

area	season	no. of samples only for age- determination		Number of Fish		
		research ship	market	measured	aged	racial investigations
IV a	1st quarter	2	3	1000	242	-
	2nd quarter	-	3	1120	140	-
	3rd quarter	-	1	350	50	-
	4th quarter	-	2	630	125	-
IV b	1st quarter	2	1	760	150	-
	2nd quarter	-	2	420	100	-
	3rd quarter	-	5	1260	274	-
	4th quarter	-	3	420	146	-
IV c	1st quarter	-	1	100	50	-
	2nd quarter	-	3	350	62	-
	3rd quarter	-	-	100	-	-
	4th quarter	-	-	-	-	-
Total annually		4	24	6510	1339	-

The Netherlands 1972

Sampling data for Saithe

area	season	no. of samples only for age- determination		Number of Fish		
		research ship	market	measured	aged	racial investigations
IV a	1st quarter	-	3	588	224	-
	2nd quarter	-	-	441	-	-
	3rd quarter	-	-	294	-	-
	4th quarter	-	1	490	75	-
IV b	1st quarter	-	-	-	-	-
	2nd quarter	-	-	-	-	-
	3rd quarter	-	-	50	-	-
	4th quarter	-	-	-	-	-
Total annually		-	4	1863	299	-

Norway
(A. Hylan)

Subarea II and I Fisheries

The sampling activity continued at the same scale as in 1971. Stock assessments were continued for the stocks of Arcto-Norwegian cod and haddock, saithe and Greenland halibut.

In February the distribution and abundance of spawning Arcto-Norwegian cod were studied in Lofoten and in March mature cod were tagged in the same area. In April a survey of cod egg distribution was carried out in Lofoten.

In April-May the distribution and abundance of young cod, haddock and redfish were studied in the Barents Sea and the Bear Island/West Spitzbergen area. In August-September a survey of the distribution and abundance of 0-group fish of commercially important species were undertaken in the same areas as part of the International 0-Group Survey. At the same time immature cod and haddock were tagged in Division IIa and Subarea I.

In March a survey of spawning saithe was undertaken in the southern part of Division IIa. In September the distribution and abundance of 0-group saithe were studied in Division IIa. Immature saithe were tagged in June and in the most southern part of Division IIa and in August in the Northern part of this Division and in Subarea I.

Subarea IV

The sampling of industrial catches of Recommendation 4 fisheries in Subarea IV and the southern part of Division IIa was undertaken through the whole year. All together 163 landings from Subarea IV and 115 from Subarea IIa were analysed. In February, June and September-October surveys of the distribution and the abundance of the most important species were undertaken in Subarea IV.

SAMPLING DATA 1972

SPECIES	AREA	SEASON	NO. OF SAMPLES		NO. OF FISH		
			R/V	Market	Measured	Aged	Tagged
COD	I	1	-	8	836	307	-
		2	33	37	5 694	2 523	-
		3	-	20	1 591	766	688
		4	-	35	5 446	1 189	-
	IIb	1	-	-	-	-	-
		2	8	-	523	523	-
		3	1	-	100	100	-
		4	-	-	-	-	-
	IIa	1	1	269	55 436	4 687	2 588
		2	3	17	3 217	386	-
		3	-	-	-	-	491
		4	-	-	-	-	-
HADDOCK	I	1	-	-	-	-	-
		2	18	14	6 846	1 931	-
		3	-	16	1 594	854	440
		4	1	17	12 509	1 103	-
	IIb	1	-	-	-	-	-
		2	1	-	16	16	-
		3	-	-	-	-	-
		4	-	-	-	-	-
	IIa	1	1	1	604	63	-
		2	-	3	229	229	-
		3	-	2	146	146	861
		4	-	-	-	-	-
SAITHE	I	1	-	-	-	-	-
		2	2	11	3 726	608	-
		3	-	15	4 749	843	800
		4	-	-	-	-	-
	IIa	1	-	13	3 020	991	-
		2	5	17	9 179	1 082	1 100
		3	-	14	5 170	931	700
		4	-	21	10 121	1 158	-
	IVa	1	1	2	1 003	298	-
		2	3	1	2 050	275	2 397
		3	-	-	-	-	-
		4	-	1	937	89	-

NORWEGIAN SAMPLING DATA 1972

SPECIES	AREA	SEASON	NO. OF SAMPLES		NO. OF FISH		
			R/V	Market	Measured	Aged	Tagged
COD	I	1	-	8	836	307	-
		2	33	37	5 694	2 523	-
		3	-	20	1 591	766	688
		4	-	35	5 446	1 189	-
	IIb	1	-	-	-	-	-
		2	8	-	523	523	-
		3	1	-	100	100	-
		4	-	-	-	-	-
	IIa	1	1	269	55 436	4 687	2 588
		2	3	17	3 217	386	-
		3	-	-	-	-	491
		4	-	-	-	-	-
HADDOCK	I	1	-	-	-	-	-
		2	18	14	6 846	1 931	-
		3	-	16	1 594	854	440
		4	1	17	12 509	1 103	-
	IIb	1	-	-	-	-	-
		2	1	-	16	16	-
		3	-	-	-	-	-
		4	-	-	-	-	-
	IIa	1	1	1	604	63	-
		2	-	3	229	229	-
		3	-	2	146	146	861
		4	-	-	-	-	-
SAITHE	I	1	-	-	-	-	-
		2	2	11	3 726	608	-
		3	-	15	4 749	843	800
		4	-	-	-	-	-
	IIa	1	-	13	3 020	991	-
		2	5	17	9 179	1 082	1 100
		3	-	14	5 170	931	700
		4	-	21	10 121	1 158	-
	IVa	1	1	2	1 003	298	-
		2	3	1	2 050	275	2 397
		3	-	-	-	-	-
		4	-	1	937	89	-
GREENLAND HALIBUT	I	2	-	10	1 566	-	-
	IIb	2	13	-	564	197	246
	IIa	2	45	-	1 330	237	752
	Va	2	24	-	2 903	398	-
	XIV	3	14	-	1 362	50	-

Norwegian sampling in the area where industrial trawl fisheries take place

SPECIES	AREA	SEASON	NO. OF SAMPLES		NO. OF FISH		
			R/V	Market	Measured	Aged	Tagged
Cod	IVa	1	8		22	22	
		2	3		44	44	
		3	8		49	46	
		4	23		233	233	
	IVb	1	12		80	80	
		3	2		160	160	
Haddock	IIa	2		6	38		
		3		3	21		
	IVa	1	9	6	1 719	453	
		2	2	15	338	69	
		3	13	8	1 528	604	
		4	24	2	2 290	1 206	
	IVb	1	6				
		3	2		320	124	
Saithe	IIa	3		1	68		
	IVa	1	5		31	23	
		2	6		237	118	
		3	11		186	138	
		4	17		316	316	
	IVb	1	1		4	4	
		3	1		20	20	
Whiting	IVa	1	8		295	84	
		3	3		176	176	
		4	12		2 150	293	
	IVb	1	8		960	154	
		3	2		107	107	
Norway pout	IIa	1		4	338		
		2		3	267		
		3		1	50		
		4		5	515		
	IVa	1	10	18	2 705	321	
		2	6	18	2 444	347	
		3	12	37	5 012	540	
		4	30	11	5 129	894	

continue.....

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SPECIES	AREA	SEASON	NO. OF SAMPLES		NO. OF FISH		
			R/V	Market	Measured	Aged	Tagged
	IVb	1	2		162		
		3	1		123	52	
Blue Whiting	IIa	1		5	168		
		2		16	1 111		
		3		23	893		
		4		1	90		
	IVa	1	3	12	946		
		2		16	1 787		
		3		44	2 355		
		4		11	893		
Silvery pout	IIa	1		2	185		
		2		4	409		
		3		3	121		
	IVa	1	1		120	20	
		2	1		50	50	
		3	3		346	120	
		4	2		65	65	
Silver smelts	IIa	1		4	433		
		2		14	902		
		3		12	923		
		4		2	170		
	IVa	1	2	8	767	34	
		2	6	14	1 440	200	
		3	8	16	2 003	399	
		4	5	6	830	218	

Poland

(W. Ciągiewicz)

Investigations on more important demersal species were carried out during 1972 in the Baltic, North Sea, South of Ireland, near the Hebrides, in the Norwegian Sea, Barents Sea, off Spitzbergen and Bear Island.

Samples were collected mainly from the commercial catches for determination of length, weight, age, sex and maturity.

1. Baltic

Cod- From 141 experimental hauls made in January-March 1972 in the Southern Baltic by ICES standard trawl 7 388 young cod were measured and the age of 1 445 cod determined.

From commercial catches made by cod trawl in the Southern Baltic 31 856 cod were measured and the detailed analysis was carried out on 4 965 cod.

Flatfish - In 46 samples of flatfish taken from commercial catches made in the Bay of Gdańsk and in the Bornholm region 4 813 flounder and 760 plaice were analysed on length, weight, age and sexual maturity

2. North Sea, Hebrides, South of Ireland

Species	North Sea		Hebrides		South of Ireland	
	length	age	length	age	length	age
Haddock	4 697	1 001	2 981	601	701	201
Saithe	2 210	300	661	300	-	-
Cod	1 456	300	-	-	-	-
Whiting	1 578	300	-	-	-	-

3. Barents Sea, Norwegian Sea, Bear Island and Spitzbergen

Species	Barents Sea		Norwegian Sea		Bear Island and Spitzbergen	
	length	age	length	age	length	age
Cod	3 898	480	1 305	483	417	180
Haddock	3 599	-	-	-	-	-

Portugal

(J. de Ataide)

Studies related to this Committee were only concerned with samples of cod taken by the commercial fishing boats in the ICNAF area (Subareas 1 and 3). Information has been obtained on length, stage of maturity, age and first age of maturity (see following table). These are being processed for later analysis.

Sampling Data for Gadus morhua

Area	Season	No. of Samples		No. of Fish		Racial Investigation
		Research Vessels	Market Samples	Measured	Aged	
ICNAF 1 ^x)	2nd Quarter	-	5	2 314	150	-
	3rd Quarter	-	28	13 250	575	-
ICNAF 3 ^{xx})	2nd Quarter	-	7	2 485	125	-
	3rd Quarter	-	20	6 666	500	-
	4th Quarter	-	1	665	-	-

x) Equivalent to statistical area IV of the North American Council on Fishery Investigations.

xx) Equivalent to statistical area XVIII and XX of the North American Council on Fishery Investigations.

Spain

(O. Cendrero)

Aucun travail n'a été fait durant 1972.

Sweden

(G. Otterlind)

In the Baltic, investigations have been made on cod along the same lines as in previous years. Otoliths were collected from about 3 000 cod. The age determination of young cod from different areas and seasons occupied the main interest. Samples of cod eggs and larvae have been collected and the abundance of young cod studied by using the Baltic standard trawl. According to the abundance of eggs and larvae in the main spawning period a better recruitment to the stock was probable for 1972 (in 1971 low oxygen content of the bottom water of the Baltic proper was followed by a low recruitment).

United Kingdom

1. England and Wales

(D.J. Garrod)

1. Region I Fisheries

Stock assessment programmes have continued. RV "Cirolana" carried out three cruises in the area during the year. During March a cod blood serum survey was completed extending from Greenland to Iceland and across to Faroe, Scotland and Norway.

In May and June a study of the vertical distribution of gadoids in the Barents Sea was initiated and in July a survey of the distribution and abundance of 0-group fish at Faroe and eastern Iceland was undertaken as part of an international survey.

2. Region II Fisheries

The programme of sampling commercial landings at all the major fishing ports was maintained.

The adult plaice biological programme in the North Sea was continued but at a lower level than in the previous three years. Plaice eggs and larval survey were carried out in the English Channel, together with release of tagged fish on each of the main spawning grounds in the east and west of the area.

The juvenile plaice studies off the Yorkshire coast, which included the tagging of 1-group fish, was extended to include an egg and larval survey in the immediate vicinity of the nursery ground. A comprehensive survey of the inshore and estuarine distribution of fish eggs and larvae was carried out around the west coast of England and Wales.

Cod investigations in the Irish Sea continued with a research cruise in March; adult cod were tagged, an egg and larval survey completed, and blood samples for immunogenetic studies collected. In the North Sea an extensive 0-group cod survey from latitude 57°N to 52°N was carried out in June.

In July-August a groundfish survey was undertaken in Region VIA to the west of Scotland.

Release of tagged fish 1972 - ICES REGIONS

Region	Species				Spurdog	Total by Region
	Plaice	Cod	Ray	Lemon Sole		
IVA	-	-	-	-	428	428
IVB	712	-	-	-	-	712
IVC	-	378	-	-	-	378
VIA	-	-	-	-	10	10
VIIA	-	1 330	-	-	-	1 330
VIID	644	-	55	36	-	735
VIII	136	-	60	4	-	200
VIIIF	-	222	-	-	-	222
Total by Species	1 492	1 930	115	40	438	4 015

Sampling Data for COD

Area	Season	No. of Samples		No. of Fish		Racial Investigation
		Research Vessels	Market Samples	Measured	Aged	
I-III-III	Spread throughout the year	-	235	41 631	1 971	-
VA	"	-	547	108 638	2 211	-
VB	"	-	93	14 683	829	-
VIA	"	-	40	6 866	514	-
IV	"	-	446	82 321	2 337	-
VIIA	"	-	115	18 960	1 875	-
VIIIF	"	-	9	1 284	197	-
VIIIG	"	-	13	511	-	-
VIIIE	"	-	2	315	-	-
VIB	"	-	1	97	-	-

Sampling Data for HADDOCK

Area	Season	No. of Samples		No. of Fish		Racial Investigation
		Research Vessels	Market Samples	Measured	Aged	
I-III	Spread throughout the year	-	186	28 462	1 169	-
VA	"	-	284	43 264	1 200	-
VB	"	-	54	10 311	17	-
VIA	"	-	24	4 791	-	-
VIB	"	-	2	488	-	-
IV	"	-	193	31 045	-	-
VIIA	"	-	33	5 734	-	-
VIIIF	"	-	4	692	-	-
VIIIG	"	-	3	487	-	-

Sampling Data for WHITING

Area	Season	No. of Samples		No. of Fish		Racial Investigation
		Research Vessels	Market Samples	Measured	Aged	
IV	Spread throughout the year	-	229	20 803	650	-
VIA	"	-	1	85	-	-
VIIA	"	-	95	10 655	968	-
VIIIF	"	-	8	974	193	-
VIIIG	"	-	1	109	39	-
VIIIE	"	-	62	9 284	427	-

Sampling Data for PLAICE

Area	Season	No. of Samples		No. of Fish		Racial Investigation
		Research Vessels	Market Samples	Measured	Aged	
I	Spread throughout the year	-	6	1 420	-	-
VA	"	-	99	16 589	958	-
IV	"	-	442	90 577	3 860	-
VIIA	"	-	107	20 733	2 001	-
VIIIF	"	-	21	5 405	344	-
VIIIG	"	-	3	741	26	-
VIIIE	"	-	56	9 278	1 010	-

Sampling Data for COALFISH

Area	Season	No. of Samples		No. of Fish		Racial Investigation
		Research Vessels	Market Samples	Measured	Aged	
I-III A-IIB	Spread throughout the year	-	59	5 924	614	-
VA	"	-	96	5 937	1 028	-
VB	"	-	37	3 726	317	-
IV	"	-	51	5 569	319	-
VIA	"	-	70	6 607	549	-

Sampling Data for HAKE

Area	Season	No. of Samples		No. of Fish		Racial Investigation
		Research Vessels	Market Samples	Measured	Aged	
IVA	Spread throughout the year	-	28	5 282	-	-
VIA	"	-	56	10 542	-	-
VIIA	"	-	47	9 692	-	-
VIIIF-G	"	-	10	3 020	-	-

Sampling Data for RAYS

Area	Season	No. of Samples		No. of Fish		Racial Investigation
		Research Vessels	Market Samples	Measured	Aged	
VIA	Spread throughout the year	-	21	2 245	-	-
VIIA	"	-	69	11 409	1 078	-
VIIIF-G	"	-	23	3 954	175	-

Sampling Data for SOLE

Area	Season	No. of Samples		No. of Fish		Racial Investigation
		Research Vessels	Market Samples	Measured	Aged	
IV	Spread throughout the year	-	185	20 958	1 223	-
VIIA	"	-	45	9 665	352	-
VIIIF-G	"	-	14	3 983	244	-
VIIIE	"	-	72	14 015	266	-

Sampling Data for LEMON SOLE

Area	Season	No. of Samples		No. of Fish		Racial Investigation
		Research Vessels	Market Samples	Measured	Aged	
VIIIE	Spread throughout the year	-	60	8 354	187	-

Sampling Data for TURBOT

Area	Season	No. of Samples		No. of Fish		Racial Investigation
		Research Vessels	Market Samples	Measured	Aged	
IV	Spread throughout the year	-	110	5 957	-	-

Sampling Data for SPURDOGS

Area	Season	No. of Samples		No. of Fish		Racial Investigation
		Research Vessels	Market Samples	Measured	Aged	
IV	Spread throughout the year	-	107	9 038	1 529	-

2. Scotland

(R. Jones)

Routine trawling surveys were carried out in the North Sea in April and October/November and on the west coast in December 1972. These were used to determine the lengths and age compositions of the major demersal stocks and to obtain pre-recruit estimates of the year class strengths of haddock, whiting and Norway pout. Further estimates of the relative strengths of gadoid year class strengths were obtained by sampling 0-group gadoids pelagically in the North Sea in July/August 1972.

Cod, haddock, whiting, hake, saithe, plaice, lemon sole, and megrims were sampled at the principal Scottish trawl and seine ports as in previous years. Samples were measured and otolith samples were taken for age determination. These data formed the basis of material supplied to Annales Biologiques and to ICES Statistical News Letters and were also used to provide forecasts for the major Scottish fisheries.

Landings of Norway pout at Scottish ports were monitored, samples being taken from both foreign landings from the North Sea, and from Scottish landings from the Minch and Shetland waters. Variations in the fecundity of this species were investigated from research vessel samples.

An exploratory fishing survey was carried out for sandeels off the Scottish north and west coasts in June.

Haddock, whiting, plaice and lemon sole were tagged in Scottish waters, and further attempts were made to improve fish condition, by using a modified canvas codend instead of a normal netting codend.

Furtherfield and laboratory work was carried out on the hearing abilities of demersal species, including cod, haddock, plaice and dab. In addition, tracking experiments were performed using ultrasonic transmitters inserted in cod and skate at several Scottish sea lochs. The acoustic properties of cod swimbladders were investigated by means of a low frequency spectral response technique.

Aquarium studies have been continued on the efficiency of food conversion in gadoids and studies have been continued on the feeding behaviour of gadoids.

Analysis of demersal fish stomach contents has been continued with particular reference to differences in stomach contents between species and between different sized individuals of the same species.

The extensive survey of the occurrence of a tapeworm larvae in the 1967 year class of North Sea whiting was completed, and investigations were continued on the occurrence of nematode larvae in the musculature of cod, whiting and small gadoids in Scottish waters.

The numbers of demersal fish measured and aged in 1972 are shown in the following table.

SAMPLING DATA FOR DEMERSAL FISH

A. Gadoid fish

(All figures in hundreds except for cod and haddock which are in thousands)

Area	COD		HADDOCK		WHITING		SAITHE		HAKE		T. ESMARKI	
	Mea- sured	Aged	Mea- sured	Aged	Mea- sured	Aged	Mea- sured	Aged	Mea- sured	Aged	Mea- sured	Aged
N. Sea	1) 63	16	1) 168	18	1) 1 126	199	1) 185	21	1) -	-	1) 194	5
	2) 1	1	2) 87	4	2) 252	28	2) +	+	2) +	-	2) 25	9
W. Coast	1) 4	2	1) 35	7	1) 69	66	1) 2	7	1) 18	-	1) 39	7
	2) +	+	2) 17	1	2) 59	11	2) +	+	2) +	-	2) 44	2
Faroe	1) 4	-	1) 14	4	1) 26	13	1) 34	7	1) -	-	1) -	-
	2) -	-	2) -	-	2) -	-	2) +	+	2) -	-	2) -	-
Iceland	1) 1	-	1) 3	1	1) +	+	1) +	+	1) -	-	1) -	-
	2) -	-	2) -	-	2) -	-	2) -	-	2) -	-	2) -	-
White Sea	1) -	-	1) 3	1	1) -	-	1) -	-	2) -	-	2) -	-

B. Flatfish

Area	PLAICE		LEMON SOLE		MEGRIM	
	Measured	Aged	Measured	Aged	Measured	Aged
N. Sea	1) 533	121	1) 430	75	1) 93	-
	2) +	+	2) +	+	2) +	-
W. Coast	1) 12	17	1) 13	9	1) 19	-
	2) +	+	2) +	+	2) +	-
Faroe	1) 24	19	1) 152	25	1) 1	-
	2) +	+	2) +	+	2) +	-
Iceland	1) -	-	1) 1	1	1) -	-
	2) -	-	2) -	-	2) -	-
White Sea	1) -	-	1) -	-	1) -	-
	2) -	-	2) -	-	2) -	-

- 1) Market sampling data
 2) Research vessel data
 + Less than 100

U.S.S.R.

(G.V. Nikolsky)

In 1972, as well as in previous years, the Polar Research Institute of Marine Fisheries and Oceanography collected materials for determination of abundance, size-age composition and distribution of cod, haddock, redfish, Greenland halibut and other bottom fish in all main fishing areas of the North Atlantic. The volume of material by areas is given in the following tables. The materials were collected on board research and scouting vessels.

In 1972 we worked at obtaining more precise evaluation of the state of stocks of the main commercial species; conditions of survival of the young at different stages of development were studied; ichthyoplankton was collected and analysed; fisheries forecasts were made; work at development of methods of forecasting was continued.

The laboratory of the northeast Atlantic of the Atlantic Research Institute of Fisheries and Oceanography carried out investigations in the North Sea and to the west of the British Isles.

In the North Sea Soviet scientists paid much attention to investigations of stock state of haddock, coalfish, whiting and Norway pout. For this purpose, we studied problems connected with the abundance of haddock year classes in their earlier stages of development and with the effect of changes of hydrographical conditions and zooplankton development on the survival of spawn and larvae. This work was carried out during expeditions from February to April.

Counting trawl survey was conducted from January to April and from September to December to determine abundance dynamics of adult and immature year classes.

The analysis of these data assisted the use of calculating methods for stock determination. Biological information on gadoid fish and Norway pout was collected west of Great Britain. Fishery statistics were analysed for preparing the recommendations for the industry.

The Baltic Institute of Fisheries studied conditions and efficiency of reproduction, stock state and composition, peculiarities of distribution of cod and plaice, effect of feeding habits on some physiological features of cod (content of proteins and lipoproteids in blood serum, liver weight, stages of gonad maturation), dates of different periods of the year cycle, effect of herring and sprat distribution peculiarities on their role as food for cod.

The chair of fish biology of the Moscow State University continued studying the peculiarities of reproduction and maturation of some fish species in the White Sea - Liopsetta glacialis (Pall.), Eleginus navaga (Pall.), Boreogadus saida (Lepechin), Cyclopterus lumpus L. and also elucidating the specificity of physiological-biochemical indices of flounder Platichthys flesus (L.) in different latitudes (the White, the Black and the Baltic Seas).

Table 1. Biological material collected and processed in the Bear Island-Spitsbergen area in 1972

Species	Mass measure- ment	Age		Fat- ness	Field Analysis of Feed	Tagging	Ring trawl		Ichthyo- plankton		Trawl samples of plankton	
		No. of specimens collected	adult young				coll.	proc.	coll.	proc.	coll.	proc.
Cod	29 538	2 677	3 171	1 979	8 479	256						
Haddock	7 415	1 292	706	428	2 202	1						
Redfish	78 106	4 880	3 749	-	11 422	-						
Halibut	17 636	1 983	-	-	4 796	1 242						
Saithe	532	10	-	-	60	-						
Other species	41 972	1 269	-	-	3 023	-						
Total	175 199	12 111	7 626	2 407	29 982	1 499	42	42	42	42	84	84

Table 2. Biological material collected and sprocessed in the Southern Barents Sea in 1972

Species	Mass measure- ment	Age		Fatness	Field Analysis of feeding	Tagging	Ring trawl		Plankton trawl samples	
	adult	No. of spec. collected	adult young				collected	processed	collected	processed
Cod	71 308	7 222	4 172	2 911	14 030	358				
Haddock	98 334	5 549	3 434	3 200	11 545	1 560				
Redfish	15 793	697	2 370	-	3 472	-				
Halibut	4 022	793	-	-	1 825	902				
Saithe	1 571	74	-	-	378	-				
Other species	47 079	3 626	-	-	5 391	393				
Total	238 107	17 961	9 976	6 111	36 641	3 213	40	40	51	51

Table 3. Biological material collected and processed off the northwestern Norwegian Coast in 1972

Species	Mass measurement adult	Age		Fatness	Field Analysis of feeding	Tagging	Ring trawl collected	Ichthyoplankton	
		collected adult	young					collected	processed
Cod	2 357	1 104	-	896	1 447				
Haddock	3 009	1 270	-	1 134	1 653				
Redfish	10 438	777	-	-	2 294				
Halibut	1	-	-	-	1				
Saithe	12 277	1 670	-	2 906	207				
Other species	2 041	-	-	106	-				
Total	30 123	4 921	-	2 030	8 407	207	514	1 508	739

Table 4. Material collected and treated in the areas of Iceland, East Greenland and North Sea

Species	Mass measure- ments	Age	Fatness	Field analysis of feeding	Tagging
		No. of specimens collected			
<u>Area of Iceland</u>					
Cod	1 281	1 035	406	706	1
Haddock	132	-	150	68	-
Halibut	56 715	1 807	-	4 434	2 054
Redfish	14 504	1 009	-	2 414	-
Saithe	1 025	413	-	560	-
Other species	34 011	1 615	-	5 345	1
Total	107 668	5 879	556	13 527	2 056
<u>Greenland area</u>					
Cod	486	100	100	232	-
Haddock	-	-	-	-	-
Halibut	13 964	600	-	2 052	101
Redfish	4 581	310	-	883	-
Saithe	-	-	-	-	-
Other species	990	-	-	122	-
Total	20 021	1 010	100	3 289	101
<u>North Sea</u>					
Cod	90	-	-	80	-
Haddock	3 995	412	-	438	-
Halibut	-	-	-	-	-
Redfish	-	-	-	-	-
Saithe	2 049	406	-	366	-
Other species	1 632	113	-	310	-
Total	7 766	931	-	1 194	-

Table 5. Material collected and processed in the areas of the Hebrides and Faroes

Species	Mass measurements	Age	Field analysis of feeding
		No. of specimens collected	
<u>Area of the Hebrides</u>			
Cod	-	-	-
Haddock	5 372	300	300
Halibut	-	-	-
Redfish	-	-	-
Saithe	231	-	30
Other species	1 185	-	30
Total	6 788	300	360
<u>Area of the Faroes</u>			
Cod	76	18	50
Haddock	225	-	30
Halibut	-	-	-
Redfish	977	297	296
Saithe	185	-	89
Other species	1 512	200	400
Total	2 975	515	865